

WHAT IS CLAIMED IS:

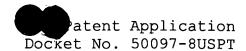
- 1 1. A method for controlling acceleration of a toy vehicle
- 2 configured to be operated by a person, said method comprising:
- 3 receiving a throttle signal operable to induce motion
- 4 via a motor operating as a drive mechanism of the toy vehicle;
- 5 generating a transition signal based on the throttle
- 6 signal; and

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- - 2. The method according to claim 1, wherein the transition signal is a pulse width modulation signal.
- 3. The method according to claim 1, wherein the pulse
 width modulation ranges from approximately a 20 percent to
 approximately a 100 percent duty cycle.
 - 1 4. The method according to claim 1, wherein the motor
 - 2 includes a high and low terminal, the transition signal being
 - 3 applied to the low terminal of the motor.





- 1 5. The method according to claim 1, wherein the operation
- 2 of the motor is a transition from a first to a second angular
- 3 velocity.

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- 1 6. according The method to claim 5, wherein
- 2 transition from the first second angular to velocity
- 3 substantially linear.
- 7. 6, The method according to claim wherein the transition signal ramps power to the motor.
- 8. method according to claim 5, wherein the 디 2 집 transition from the first to second angular velocity is non-.3 linear.
 - according to 1 9. method claim 5,
 - 2 transition occurs over a time span of at least one second.

- 1 10. The method according to claim 1, further comprising:
- 2 receiving a shift signal indicative of a change of
- 3 direction of motion for the toy vehicle;
- 4 if power is being applied to the motor,
- 5 initiating a delay; and
- 6 applying the transition signal to the motor.
 - 11. The method according to claim 1, further comprising:

 forming a second transition signal upon the throttle
 signal being transitioned, the second transition signal being
 utilizable upon the throttle signal being re-transitioned over a
 - 12. The method according to claim 11, further comprising:
- 2 initiating, upon the throttle signal being re-
- 3 transitioned before expiration of the predetermined time
- 4 duration, the transition signal at a level associated with the
- 5 second transition signal.

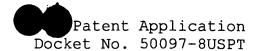
predetermined time duration.

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- 1 13. The method according to claim 11, wherein the second
- 2 transition signal is substantially linear.

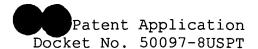




- 1 14. A toy vehicle operable by a person, said toy vehicle
- 2 comprising:
- 3 a battery having a positive and a ground terminal, and
- 4 for providing power to electrical components of the toy vehicle;
- 5 a motor;
- 6 a mobility device coupled to said motor and operable
- 7 to provide motion for the toy vehicle;
- <u></u> 8 a throttle switch electrically coupled between said
- . 0 0 9 V battery and said motor, and operable to provide power to said
- **T**10 motor; and

- 型11 切 a circuit having a first and a second terminal, the
- 12 13 13 first terminal being coupled to said battery and the second
 - terminal being coupled to said motor, said circuit being
- [™]14 operable to generate a transition signal for said motor to
- านี้ 15 transition from a first to a second angular velocity.
 - 1 15. The toy vehicle according to claim 14, wherein the
 - 2 first terminal of said circuit is coupled to the ground terminal
 - 3 of said battery.
 - 1 16. The toy vehicle according to claim 14, wherein the
 - 2 transition signal is a pulse width modulation signal.





- 1 17. The toy vehicle according to claim 16, wherein the
- 2 pulse width modulation signal has a duty cycle of above
- 3 approximately 20 percent corresponding to the first angular
- 4 velocity.

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- 1 18. The toy vehicle according to claim 14, wherein said
- 2 circuit includes a processor operable to execute software for
- 3 producing the transition signal.
 - 19. The toy vehicle according to claim 18, wherein the software further produces a second transition signal upon transition of said throttle switch.
 - 20. The toy vehicle according to claim 14, wherein the transition from the first to the second angular velocity is substantially linear.
- 1 21. The toy vehicle according to claim 14, wherein the
- 2 transition signal causes a ramp of the power to said motor.
- 1 22. The toy vehicle according to claim 14, wherein the
- 2 transition from the first to the second angular velocity is non-
- 3 linear.

- 1 23. The toy vehicle according to claim 14, further
- 2 comprising a disable mechanism operable to disengage the power
- 3 from said motor.

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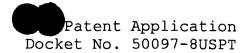
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- 1 24. The toy vehicle according to claim 23, wherein the
- 2 disable mechanism is a switch.
 - 25. The toy vehicle according to claim 23, wherein said circuit includes failsafe detect circuitry for detecting a failure and enabling the disable mechanism upon detection thereof.
 - 26. The toy vehicle according to claim 14, further comprising a shift mechanism to switch between forward and reverse, said circuit being operable to remove power from said
- 4 motor, generate a delay, and reinitiate the transition signal
- 5 upon a transition between forward and reverse.
- 1 27. The toy vehicle according to claim 14, wherein the
- 2 mobility device includes at least one of a wheel and a
- 3 propeller.





- 1 28. The toy vehicle according to claim 14, wherein the toy
- 2 vehicle is configured to resemble at least one of the following:
- 3 automobile, truck, boat, airplane, scooter, and motorcycle.

- 1 29. A system for controlling acceleration of a toy vehicle
- 2 configured to be operated by a person, said system comprising:
- means for receiving a throttle signal operable to
- 4 induce motion via a motor operating as a drive mechanism of the
- 5 toy vehicle;

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- 6 means for generating a transition signal based on the
- 7 throttle signal; and
 - means for applying the transition signal to effect operation of the motor.
 - 30. The system according to claim 29, wherein the transition signal is a pulse width modulation signal.
 - 31. The system according to claim 29, further comprising:
- 2 means for receiving a shift signal indicative of a
- 3 change of direction of motion for the toy vehicle; and
- 4 means for determining if power is being applied to the
- 5 motor;
- 6 means for initiating a delay; and
- 7 means for applying the transition signal including the
- 8 delay to the motor if power is being applied to the motor.

- 1 32. The system according to claim 29, further comprising:
- 2 means for forming a second transition signal upon the
- 3 throttle signal being transitioned, the second transition signal
- 4 being utilizable upon the throttle signal being re-transitioned
- 5 over a predetermined time duration.
- 1 33. The system according to claim 32, further comprising:
 - means for initiating, upon the throttle signal being re-transitioned before expiration of the predetermined time duration, the transition signal at a level associated with the second transition signal.
 - 34. The system according to claim 29, further comprising means for providing a failsafe to disengage the motor upon detecting a failure of said means for generating the transition signal.

- 1 35. A system for controlling a toy vehicle having a
- 2 battery and a motor, said system comprising:
- 3 a circuit having a first and second terminal, the
- 4 first terminal electrically coupled to the battery and the
- 5 second terminal coupled to the motor for rotating a mobility
- 6 device,

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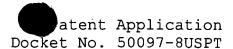
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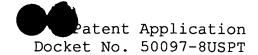
- 7 a third terminal electrically coupled to a device
- - generate a transition signal, based on receiving the throttle
 - signal on the third terminal, to transition the motor from a
 - first to a second angular velocity.
 - 36. The system according to claim 35, wherein the toy
 - vehicle is configured to resemble an automobile, truck, boat,
 - 3 airplane, motorcycle, and scooter.
 - 1 37. The system according to claim 35, wherein the mobility
 - 2 device includes at least one of a wheel and propeller.
 - 1 38. The system according to claim 35, wherein the
 - 2 transition signal is a pulse-width modulation signal.



- 1 39. The system according to claim 38, wherein the pulse-
- 2 width modulation signal has a duty cycle of approximately 20
- 3 percent as associated with the first angular velocity.
- 1 40. The system according to claim 35, wherein the first
- 2 terminal is electrically coupled to a ground terminal of the
- 3 battery.

- 1 41. A computer-readable medium having stored thereon
- 2 sequences of instructions, the sequences of instructions
- 3 including instructions, when executed by a processor, causes the
- 4 processor to:
- 5 receive a throttle signal operable to induce motion
- 6 via a motor operating as a drive mechanism of the toy vehicle;
- 7 generate a transition signal based on the throttle
- 8 signal; and
 - apply the transition signal to effect operation of a motor operating within a toy vehicle.





42. A method for disabling a toy vehicle, configured to be operated by a person, having a battery and a motor, said method comprising:

receiving an on/off signal indicative to turn on and off the motor;

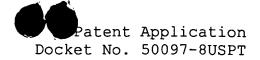
generating a switch signal to apply to the motor to induce motion of the toy vehicle;

monitoring operation of the switch signal;

determining improper operation of the switch signal; and

disengaging the motor from the battery upon said determining an improper switch signal.





- 1 43. A system for disabling a toy vehicle, configured to be
- 2 operated by a person, having a battery and a motor, said system
- 3 comprising:
- 4 means for receiving an on/off signal indicative to
- 5 turn on and off the motor;
- 6 means for generating a switch signal to apply to the
- 7 motor to induce motion of the toy vehicle;
- 8 means for monitoring operation of the switch signal;
- 9 means for determining an improper switch signal; and
 - means for disengaging the motor from the battery upon
 - said determining an improper switch signal.

- 1 44. A toy vehicle operable by a person, said toy vehicle comprising:
- a battery having a positive and a ground terminal, and
- 4 for providing power to electrical components of the toy vehicle;
- 5 a motor;
- 6 a mobility device coupled to said motor and operable
- 7 to provide motion for the toy vehicle;
- 8 a first switching element coupled between said motor

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- a second switching element coupled to said battery,
- and operable to indicate application of power to said motor; and
- a circuit having a first and a second terminal, the
- first terminal being coupled to said second switching element
- and the second terminal being coupled to said motor, said
- $\square 15$ circuit including a third switching element being operable to \square
 - 16 generate a signal for said motor to turn on and off, said
 - 17 circuit further comprising a failsafe circuit to detect a
 - 18 failure of a component of said circuit and enabling said first
 - 19 switching element to disable said motor.
 - 45. The system according to claim 44, wherein said third switching element includes at least one FET.